

Positioning device for ophthalmic scanning laser systems

Team 23: “Ocular Imaging” Team

Client: Carol Rasmussen

Advisor: Professor Tom Yen

Team Members: Thomas Fleming (Leader)

Daniel Frost (BSAC)

Vidhya Raju (BWIG)

William Stanford (Communicator)

September 26 to October 2, 2008

Last Week’s Goals

- Start working on the mid-semester presentation.
- Come to a conclusion as to what type of platform will be most feasible and how we intend to rotate that platform about a fixed frontal point.
- Discuss the possibility of a user interface that is simpler than using each of the individual hand cranks, and the costs of parts necessary for such an interface.

Summary of Accomplishments

- The presentation was broken down into the following sections
 - Vidhya: Introduction and background on OCT
 - Dan: Problem statement and design constraints
 - Will: Design alternatives and design matrix
 - Tom: Final design decision and future work
- We obtained a technical drawing of the x-y cross slide table and found that it weighs 63 lbs., much lower than the 150-200 lb. range that we feared might be too great for a common table.
 - Ms. Rasmussen said that we could buy a new table (as long as it has wheels) should the current table not be able to bear the ~160 lb. combined load of the camera and the cross-slide table.

- We discussed the rotational mechanism once again, and are still leaning towards anchoring a single frontal point and adding small ball bearing wheels (possibly rollerblade wheels or something of that nature).

This Week's Goals

- If we can get consent for the cross-slide platform, we would like to purchase it this week (~\$285 including shipping).
- Complete preparation for our presentation (Friday, October 17 at Time: TBD).
- Create a technical drawing of our intentions for a rotation mechanism and determine the necessary parts
 - Continue to look into arced tracks for anything possibly within our price range.
 - Make sure we can effectively fix the camera device to the platform for the safety of the operator and patients during transportation and use.

Project Difficulties

- none

Activities

- 10/3/08 **Team** Met with Prof. Yen to discuss our finding of a cross-slide table to fit our x-y mobility needs. He suggested that it might be too heavy for the table in the office, so we decided to look into the weight of the cross-slide and the capacity of the table ~1 hour
- 10/3/08-10/9/08 **Team (individually)** Each team member worked on his or her individual portion of the presentation. Vidhya videotaped herself since she cannot attend the actual presentation. Everyone developed some preliminary powerpoint slides~2-3 hours/person
- 10/8/08 **Team** Met to discuss the table weight issue as well as our progress on the presentation. Decided that at 63 lbs. the cross-slide table is still the best option to start, especially since we can buy a different table if the load capacity of the current table is too low. ~2 hours

Project Schedule

Preliminary Project Schedule	
Dates	Activities
Sept. 19-25	Assess our monetary situation and choose what materials we can buy pre-assembled and what materials we'll have to fabricate for a platform
Sept. 26-	Decide upon a user interface style (e.g. joystick, buttons, screws, etc.), and whether

Oct. 2	that interface will be electronic or mechanical. Research prices for necessary components.
Oct. 3 –10	Decide on team roles for device fabrication (platform vs. user interface), and finalize designs for each aspect of the device. Begin preparation for mid-semester presentation.
Oct. 10-17	Order necessary parts and begin fabrication. Finalize mid-semester presentation preparation.
Oct. 17-24	Receive necessary parts for platform (x-y and rotation). Determine whether it is reasonable to focus part of our efforts on simplifying the user interface at this point.
Oct. 24-31	Order any small parts that were not thought of upon first order. Simplify the user interface of the device. Begin work on final paper.

Expenses

- **None**